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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/622,881

07/18/2003

Sunil G. Warrior

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EXAMINER

HODGE, ROBERT W

ART UNIT

PAPER NUMBER

1795

MAIL DATE

DELIVERY MODE

08/27/2008

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/622,881	<b>Applicant(s)</b> WARRIER ET AL.	
	<b>Examiner</b> ROBERT HODGE	<b>Art Unit</b> 1795	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 03 July 2008.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-3, 5-21 and 24-26 is/are pending in the application.
- 4a) Of the above claim(s) 13-21 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 5 is/are allowed.
- 6) ☒ Claim(s) 1-3, 6, 7, 9-12 and 24-26 is/are rejected.
- 7) ☒ Claim(s) 8 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Response to Arguments***

Applicant's arguments filed 7/3/08 have been fully considered but they are not persuasive. Applicants state that it would not be an obvious modification to substitute the O-ring of Gottzmann for the seal structure in Keegan. The modification as outlined in the Non-Final office Action dated 4/3/08 was a conceptual modification. It is clearly stated that Keegan teaches the instantly claimed invention except for the fact that Keegan does not teach that the seal (which is a continuous closed loop structure already) is a continuous **fiber** seal which is a limitation in independent claims 1 and 24, and as further explained in the office action a skilled artisan would be motivated to change the material used in Keegan to a continuous fiber seal which is a material taught by Gottzmann that is used in the same high temperature environment as Keegan, in order to provide a reinforced seal in Keegan that will prevent leakage of the reactant gases. Applicants also state that Gottzmann is not analogous, however as was already stated in the previous office action, Gottzmann is from the same problem solving area of sealing high temperature reaction areas to prevent leakage of reactant gases. Therefore as further clarified above the prior art rejections will be maintained.

### ***Claim Rejections - 35 USC § 103***

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 1-3, 6, 7, 9-12 and 24-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Pre-Grant Publication No. 2003/0215689 hereinafter Keegan in view of U.S. Patent No. 6,139,810 hereinafter Gottzmann.

Keegan teaches a seal assembly for a solid oxide fuel cell stack (abstract), comprising at least two fuel cells each comprising an electrolyte 40 having a cathode layer 50, an anode layer 30, a bipolar plate 24 (see figure 1 and paragraph [0022]), and a seal 80 that is formed into a continuous closed loop structure that forms a substantially gas impermeable seal between opposed surfaces (see figures 3-5 and paragraph [0037]). Keegan further teaches that the seal is provided in a groove 82 which as defined by applicants is a compression stop (see figures 3-5) and that the seal comprises a stable oxide ceramic or other materials such as zirconia, alumina, and can be enhanced with materials such as nickel, silver, copper, iron and aluminum by doping (i.e. impregnating) (paragraphs [0037]-[0042]).

Keegan does not teach that the seal is a continuous fiber seal or the use of a frame.

Gottzmann teaches a solid oxide tube and shell reactor, wherein the solid oxide tubes are sealed with a continuous fiber tow wrapped into a closed loop structure (i.e. twisted rope seal) forming a substantially gas impermeable seal between the two components, wherein at least two fibers are in a substantially concentric relationship with each other, also comprising a compression stop extending from one of the reactor components to another reactor component that is frame like in shape as well as a groove to hold the seal member, with dimensions similar to those found in claim 12 and

Art Unit: 1795

that said seal can be compressed (figures 1-4, and column 7, line 8 – column 10, line 35).

Keegan and Gottzmann are analogous because they are from the same problem solving area of sealing high temperature reaction areas to prevent leakage of reactant gases.

At the time of the invention it would have been obvious to a person having ordinary skill in the art to include the teaching of the fiber sealing structure and frame member associated therewith in Keegan as taught by Gottzmann in order to provide a seal that is reinforced with a continuous fiber in the fuel cell stack and prevent any of the reactant gases from leaking out of the stack thus preventing any explosion hazards.

### ***Allowable Subject Matter***

Claim 5 is allowed.

Claim 8 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The reasons for indicating allowable subject matter can be found in the final office action dated 10/19/05.

### ***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ROBERT HODGE whose telephone number is (571)272-2097. The examiner can normally be reached on 8:00am - 4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached on (571) 272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1795

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/R. H./  
Examiner, Art Unit 1795

/Jonathan Crepeau/  
Primary Examiner, Art Unit 1795